

### REMARKS

Applicant appreciates Examiner's review of the application and obvious interest in insuring only quality patents issue from the USPTO. The Specification and independent Claims 1 and 8 have been previously amended to address Examiner's concerns, improve clarity, or both. The total number of claims and the total number of independent claims remains the same. No new substantive material has been added to the Specification. Reconsideration of the application is respectfully requested.

To assist in reviewing Applicant's response: where Applicant has quoted Examiner's office action, the quoted material is single-spaced and indented and Applicant's response to Examiner's concerns is in bold print.

Under ***Claim Rejections- 35 U.S.C § 103*** of the office action, Examiner quotes 35 U.S.C § 103(a) in para. 1.

Under ***Claim Rejections- 35 U.S.C § 103*** of the office action in para. 2, Examiner states:

2. Claims 1 - 18 are rejected under 35 U.S.C § 103(a) as being unpatentable over Alexander et al. (US 6,574,561) in view of Curkendall (US 6,346,885).

Regarding claim 1, Alexander discloses a system for managing information and collection of samples at remote locations including a client-server system (10, Fig. 1) comprising at least one portable device (12, col. 7 line 37+) having some capabilities of a personal computer, wherein the portable device may be used for collecting, preserving, integrating, processing, and communicating some of the information (col. 7, line 55+), at least one computer (26, 28, col. 10 line 5+), wherein the computer communicates with the portable device and may function as said server to process data and run software applications, at least one instrumentation device (camera, etc., col. 8, line 60-65) for collecting some of said samples (images, bar codes, biometric data, col. 8, line 60-65) that communicates directly with the portable device, at least one hardware interface employed between the portable device and instrumentation device (inherent since two devices are connected and operating), at least one software interface employed between the portable device and instrumentation device (inherent since two devices are connected and operating), at least one software program for running a geographic information system (col. 8, line 35-40, GPS), and at least one communications device (24, internet, 18, communication network, wireless hardware) that facilitates communication between the portable device, the computer, and the instrumentation device.

The system of Alexander differs from the claimed invention in that it does not include a device to provide coded labels to facilitate tracking of samples.

Curkendall discloses a system for managing information and collection of samples at remote locations (see abstract) including a device to provide coded

labels to facilitate tracking of samples (col. 10 line 55-57).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Alexander to include a device to provide coded labels for samples, as taught by Curkendall, to enable efficient, accurate gathering, cataloging, and communication of field data (see Curkendall, col. 1, line 14-21, Alexander, abstract).

Regarding claim 2, the communications device is a wireless device (Alexander, col. 8 line 20+). Regarding claim 3, the instrumentation device is a digital camera. Regarding claim 4, the information could come from a variety of sources, including data entry forms, GPS data, audio, etc. Regarding claims 5 and 6, the portable device and computer could be a PDA, laptop, mainframe, etc. Regarding claim 7, bar codes are a well-known means for inventorying items and the printer could provide this. Regarding claims 8-18, the features of the invention recited in these claims have already been addressed in the rejection above. Furthermore, features such as the particular means for identifying and managing (merging, tagging, time stamping, etc.) data or samples, the particular type and details of the software used, and particular nature of the data are matters of design choice since they do not affect the nature or functioning of the invention and do not solve any stated problem or serve any particular purpose.

Under *Response to Arguments* of the office action in para. 3, Examiner first states:

3. Applicant's arguments filed December 5, 2008 have been fully considered but they are not persuasive. Applicant argues that the prior art references do not disclose all the recited features of the claimed invention, in particular, that the prior art does not show automated collection of samples, various hardware and software interfaces, barcode stamps, or readers. Applicant also argues that there is no motivation to combine the teachings of the prior art references and that the inventions of the prior art are non-analogous art.

The examiner disagrees and stands by the rejection. The rejection above has been revised to address the newly added limitation drawn to collecting samples and to point out where motivation for combining the prior art teachings can be found. The others (sic) features are also addressed in the rejection. In the examiner's view, the inventions of the prior art references, which are related to automated gathering of samples at geographically remote locations, are directly related to the claimed invention and would constitute analogous art. Lastly, the affidavit submitted on December 5, 2008 has been reviewed and considered by the examiner, but has not altered the examiner's stand on the rejection.

**Applicant respectfully notes that it does not appear that Examiner has complied with the requirements of MPEP § 706.07 in identifying this Office Action as a Final Office Action. Perhaps this was inadvertent. Specifically, the following is pertinent:**

***Before final rejection is in order a clear issue should be developed between the examiner and applicant. To bring the prosecution to as speedy conclusion as possible and at the same time to deal justly by both the***

applicant and the public, the invention as disclosed and claimed should be thoroughly searched in the first action and the references fully applied; and in reply to his action the applicant should amend with a view to avoiding all the grounds of rejection and objection. Switching from one subject matter to another in the claims presented by applicant in successive amendments, *or from one set of references to another by the examiner in rejecting in successive actions claims of substantially the same subject matter will alike tend to defeat attaining the goal of reaching a clearly defined issue* for an early termination, i.e., either an allowance of the application or a final rejection.

While the rules no longer give to an applicant the right to "amend as often as the examiner presents new references or reasons for rejection," *present practice does not sanction hasty and ill-considered final rejections*. The applicant who is seeking to define his or her invention in claims that will give him or her the patent protection to which he or she is justly entitled should receive the cooperation of the examiner to that end, and not be prematurely cut off in the prosecution of his or her application....

The examiner should never lose sight of the fact that in every case the applicant is entitled to a full and fair hearing, and that *a clear issue between applicant and examiner should be developed, if possible, before appeal*. (emphasis added).

Applicants respectfully note that Examiner should have included in this "final" Office Action an argument containing evidence, not merely examiner opinion, regarding a response to Applicants' response to the first Office Action. Examiner did not make a *prima facie* case of obviousness under §103. Since this has not been done, it is inappropriate to make this Office Action final, especially considering that the reference (*Alexander et al.* in view of *Curkendall*) relied upon in this Office Action is the same as in the first. Thus it appears that the Examiner may have been "hasty" in his initial examination, and thus not provided Applicant opportunity to respond to a *prima facie* case of obviousness in a second non-final Office Action. Further, Examiner did not respond specifically to each of Applicants' positions in the response to the 1<sup>st</sup> Office Action. For just one example, Examiner fails to specifically address how knowing the single *function* of the *Alexander et al.* patents would make the functions performed by Applicant's invention obvious to one of ordinary skill in the art at the time of the invention. Applicant recognized a problem which would most certainly not have been obvious from either *Alexander et al.* or *Alexander et al.* in view of *Curkendall*. Therefore, Applicant respectfully requests the Examiner to re-classify this second Office Action as a non-final Office Action and pursue establishing the necessary *prima facie* case for a §103

rejection. Applicant includes below the discussion from the response to the 1<sup>st</sup> Office Action for Examiner's convenience.

Applicant again respectfully disagrees with Examiner's analysis which is changed little from the initial rejection, specifically since *Alexander et al.* is not suited to the purpose of management of sample collection. For Examiner's convenience, Applicant again provides the Abstract from *Alexander et al.* for initial discussion points:

A system for automating the gathering of field *information that describes the condition of specific geographical locations at specific times via a field information recording device* having a GPS receiver for the recording and assignment of the space-time coordinates as information is gathered. The information and space-time coordinates are transmitted to a management center for processing over a communication network. Upon receipt, the field information is integrated into a geographic database such that the information *generates a template showing the current state or condition of the identified geographical location* on an automated basis. The template and the associated geographical portion of the geographical database are distributed to users via the Internet, intranet or other communication means. (emphasis added).

Compare this to Applicant's Abstract:

The Automated Resource Management System (ARMS<sup>TM</sup>) *automates collection, integration, analysis, reporting and archiving of data in a variety of applications* while insuring data accuracy and reliability not attainable conventionally. Applications include: environmental, safety, security, military, educational, emergency management, land use, fish and wildlife management, construction and maintenance of highways and waterways, mining, exploration, manufacturing, recreational management, urban restoration, and archaeological preservation. *ARMS<sup>TM</sup> integrates a number of portable devices*, employing digital technology and specialized software in these portable devices as well as analysis devices, such as PCs and servers. ARMS<sup>TM</sup> increases efficiency and reduces cost, while accurately and timely preserving and integrating information. It is *useful for both post-processing and real-time reporting, analysis, and pro-active direction of ongoing investigations.* (emphasis added).

Applicant respectfully notes the *function* of Applicant's invention is to manage the taking of samples while the *function* of the *Alexander* device is to automate the gathering of field *information that describes the condition of specific geographical locations at specific times*. The *Alexander* device *generates a template showing the current state or condition of the identified geographical location*. Applicants' invention *automates collection,*

*integration, analysis, reporting and archiving of data in a variety of applications* when it *integrates* the output and facilitates interaction among *a number of portable devices*. There is no discussion in *Alexander* of each separate function of the various elements of Applicant's invention in providing the *function(s)* necessary to handle actual *samples*,  
5 either tangible or intangible (e.g., measurements such as length, weight, mass, and the like). (Claim 1; FIG. 3; p. 6, line 29 - p. 7, line 27). Further, the *Alexander* invention has a sole purpose of "damage assessment" and concomitant geographic location of the damage to communicate to an "Emergency Management Center." (Col. 7, lines 10-11; Col. 11, lines 53-57). These are more than "design considerations" possibly employable in  
10 "adapting" the *Alexander* apparatus, but rather require an entirely different unique and unobvious engineering solution to address these stringent requirements which can not be met by a variation of the *Alexander* device even in view of the addition of the RFID reader of *Curkendall*. Applicant respectfully notes the comments of Judge Learned Hand in *Reiner v. I. Leon Co.*, 285 F.2d 501, 503-504, 128 USPQ 25, 27 (2d Cir. 1960):

15           It is idle to say that combinations of old elements cannot be inventions; *substantially every invention is for such a "combination;"* that is to say, it consists of former elements in a new assemblage. All the constituents may be old, if their new concurrence would not "have been obvious *at the time the invention was made* to a person having *ordinary skill in the art.*"  
20 (emphasis added).

35 U.S.C § 103 was written to provide an *objective measure* for ascertaining whether an invention is non-obvious, specifically addressing the inadequacy of such *subjective measures* as "flash of genius" espoused in *Cuno Engineering Corp. v. Automotive Services Corp.*, 314 US 84, 87, 51 USPQ 272, 275 (1941) (*Cuno*).

The purpose of §103 is to substitute "nonobviousness" for the subjective "standard or level of invention" that came about by judicial construction in parallel with the *judicially* created nonobviousness standard of *Hotchkiss*. *Hotchkiss v. Greenwood*, 52 US (11 How.) 248 (1850). One observes, however, that *Hotchkiss* also introduced a  
30 tortuous "path of reasoning," by additionally urging the need for an "appropriate" *level or standard of invention* beyond novelty. This latter "guidance" led to inconsistent *subjective* holdings and the need for statutory correction resulting in §103. Some, like Judge Learned Hand, looked to *objective* indicia as a standard approach even before the

passage of §103, while others continued to seek an "appropriate" level of invention, often ignoring strong *objective* indicia.

In those cases in which the court required an "appropriate" *level of invention*, the courts developed *negative* rules of patentability. For example, the *Hotchkiss* court stated that the "*mere* substitution of materials" could not be a basis for "invention" and therefore not a basis for a patent. Other *negative* rules were expounded: *merely* rendering automatic that which was manual, a *mere* change in proportions, and the like. Placing the pejorative term "*mere*" or "*merely*" and like terms in the premise *makes the premise the conclusion* and removes all *objectivity* from the analysis. In fact, substituting materials (e.g., plastics for metal to prevent corrosion and reduce cost) or a change in proportion (e.g., CDs versus floppy disks) can and does produce orders of magnitude improvements that are totally unobvious to one of *ordinary* skill in the art *at the time the invention was made*. The use of *negative* rules culminated in *A&P Tea Co. v. Supermarket Equipment Co.*, 340 US 147, 87 USPQ 303 (1950) (*A&P Tea*), with propositions supporting the notion that "*a level of invention*" determined patentability. The first proposition was that *objective* indicia of nonobviousness such as "long felt but unsatisfied need" and "commercial success" could *not* establish patentability *absent* "invention." The real motivation for Congress taking up the subject of judicial inconsistency regarding the definition of *invention* was this statement from *A&P Tea Co.*:

Courts should scrutinize combination patent claims with a care proportioned to the difficulty and improbability of finding *invention* in the assembly of old elements. (emphasis added).

This holding promoted the concept of an inherently *subjective* "level of invention" rather than a desirable *objective* concept of nonobviousness and was sufficient motivation for Congress to pass the Patent Act of 1952 that included §103. Any return to this way of defining nonobviousness rejects the reason for codifying §103.

Fast forward to a trio of cases decided by the Supreme Court in 1966, a sufficient time after codification of §103 to attain some judicial history in interpreting §103. The "standard of invention" of *A&P Tea* was ignored in: *Graham v. John Deere Co.*, 383 US 1, 148 USPQ 459 (1966) (*Graham*); *Calmar & Colgate-Palmolive Co. v. Cook Chemical Co.*, *ibid*, and *United States v. Adams*, 383 US 39, 148 USPQ 479 (1966) (*Adams*). The recent

case of *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007) (*KSR*) cited to *Graham* and *Adams* in reasserting that the "several basic fundamental inquiries" of *Graham*, as re-stated by many Examiners in all Office Actions citing §103, are required. These include:

5       the scope and content of prior art;  
         differences between prior art and claims at issue;  
         the level of skill in the pertinent art and, often overlooked;  
         *objective* indicia such as: commercial success, long felt but unsolved needs, failure  
         of others, and the like to "illustrate" the *circumstances surrounding the origin of*  
10       *the subject matter sought to be patented.* (emphasis added).

*Adams* mentioned only two "secondary considerations:" teaching away and surprise results based on an expert's opinion. Consider:

      All §101-patentable inventions are novel and useful *combinations* of known elements. Further, there is only *one* §103 standard of nonobviousness for all types of  
15   inventions. *Panduit Corp. v. Dennison Mfg. Co. (Panduit II)*, 810 F. 2d 1561, 1575, 1 USPQ 2d 1593, 1605 (Fed. Cir. 1987); *Medtronic, Inc. v. Cardiac Pacemakers, Inc.*, 721 F. 2d 1563, 720 USPQ 97 (Fed. Cir. 1983); *Fromson v. Advance Offset Plate, Inc.*, 720 F. 1565, 219 USPQ 1137 (Fed. Cir. 1983); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F. 2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *Environmental Designs Ltd. v. Union Oil*, 713 F. 2d 693, 218  
20   USPQ 865 (Fed. Cir. 1983). "It is immaterial to the issue, however, that all of the elements were old in other contexts. What must be found obvious to defeat the patent is the *claimed combination.*" *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F. 2d 1437, 1448, 223 USPQ 603, 609-610 (Fed. Cir. 1984). (emphasis added). Chief Judge Markey in *Fromson v. Advance Offset Plate, Inc. (Fromson II)* at 755 F.2d 1549, 1556, 225 USPQ 26,  
25   31 (Fed. Cir. 1985) chided the trial court for stating that the patent in suit is a "combination patent comprised exclusively of old elements." He observed that "Only God works from nothing. Men must work with old elements." *Id.*

      The *Adams* case further expounds on the "guidelines" useful for determining nonobviousness of the invention *as a whole*. The structure claimed in *Adams* was as  
30   similar physically and chemically to the prior art as was possible without direct anticipation. The *Adams* battery used electrodes of cuprous chloride and magnesium, a

combination of electrodes never before seen in a *single* battery. The prior art *taught* that cuprous chloride electrodes were *equivalent* to silver chloride electrodes and that magnesium electrodes were the *equivalent* of zinc electrodes, both zinc and silver chloride taught in prior art as electrode material.

5           The Government argued that the structural similarities made the invention obvious and that *only* the physical or structural differences between the invention and prior art may be investigated as a *basis* for determining nonobviousness. This was rejected by the *Adams* court just as using *only* a strict TSM test was rejected by the *KSR* (2007) court over 40 years later. Specifically, the *Adams* court stated:

10           If the use of magnesium for zinc and cuprous chloride for silver chloride were *merely* equivalent substitutions, it would follow that the resulting device – *Adams'* – *would have equivalent operating characteristics*. But it does not. (emphasis added).

15           The characteristics of the *Adams* battery and the teachings of the prior art were such that accepted standards in the technological field taught away from the *Adams* approach and the court noted that:

20           *Known disadvantages* in old devices which would naturally discourage the search for new inventions *may be taken into account* in determining obviousness. (emphasis added).

25           Applicant notes the known disadvantages of existing systems as outlined in the Background of the application, in particular the ability to integrate various separate devices while reducing the need for manual manipulation of data. (p. 1, lines 17 – 29).

30           Further, other factors were mentioned by the *Adams* court, including the commercial success of the *Adams* battery and its particular usefulness to the military and for scientific research heretofore prohibited for lack of this type of power source. The holding in *Adams* properly addresses the fact that courts and, hopefully, Examiners, must consider *all* the evidence before concluding an obviousness analysis, *including the circumstances surrounding the making of the invention at the time of the invention*.

          Note that "secondary" considerations are secondary only as to the order of expounding them. i.e., they are considered only *after* novelty is established. *As evidence*, secondary considerations, being *purely objective*, may be the best (and often, only) "hard"



evidence (i.e., not requiring a judgment be made) of what is obvious to one of *ordinary* skill in the art *at the time the invention was made*. These secondary considerations are clearly introduced to *avoid* any hint of inappropriate hindsight entering the analysis.

Three years after the above trio of landmark cases, the Supreme Court in  
5 *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 US 57, 163 USPQ 673 (1969) while invalidating the patent at issue, stated:

Each of the elements combined in the patent was known in the prior art...  
The combination of putting the burner together with the other elements in  
one machine, though perhaps a matter of great convenience, *did not produce*  
10 *a "new or different function," Lincoln Engineering Co. v. Stewart-Warner Corp.*, 303 U.S. 545, 549, within the test of validity of combination patents...  
(emphasis added).

Without agreeing with the rationale involved in elucidating this additional  
15 "judicially created restriction" to an obviousness analysis, it is apparent that Applicant's invention provides a different function, i.e., integration of various instrumentation, GPS, recorders, communication devices and processors (computers) and bar code readers/generators to automate sample and information collection and remove or reduce the number of manual steps required. (Claim 1; FIG. 3; p. 6, line 29 - p. 7, line 27).  
20 Further, the *Alexander* invention has a sole purpose of "damage assessment" and concomitant geographic location of the damage to communicate to an "Emergency Management Center." (Col. 7, lines 10-11; Col. 11, lines 53-57). This, of course, assumes that the problem itself would have been obvious to one of *ordinary* skill in the art *at the time the invention was made* in order for the second part of the test to be applicable. The  
25 problem addressed by Applicant is providing the *function(s)* necessary to automate the handling of actual *samples*, either tangible or intangible (e.g., measurements such as length, weight, mass, and the like). This is a problem not previously required to be addressed. Applicant more fully discusses the importance of "recognition of the problem" below.

30 The Court in *Anderson's Black Rock* further cited *A&P Tea*, stating, perhaps unnecessarily considering the holdings in the trio of *Graham*, *Adams* and *Calmar and Colgate*, that:

A combination of elements may result in an effect greater than the sum of the several effects taken separately. *No such synergistic result is argued*

*here*. It is, however, fervently argued that the combination filled a long felt want and has enjoyed commercial success. But these matters "*without invention* will not make patentability." *A&P Tea Co. v. Supermarket Corp.*, 340 U.S. 147, 153. (emphasis added).

5 Applicant's combination of GPS, communications devices, recorders, processors and various instrumentation as well as the innovative hardware and software interfaces, that minimize the need for manual entry and manipulation of information and separate manual retrieval thereof, provides a non-obvious solution to a heretofore unaddressed  
10 problem. (FIGS. 2, 4; p. 8, lines 7 - 26).

Bringing the subjective requirement for "invention" of *Cuno Engineering* back into the mix in *A&P Tea* did little to resolve the uncertainty (*subjectivity*) that *could* be introduced in the reasoning needed to establish nonobviousness and probably had the opposite effect. Ascertaining the "status" of a "combination" invention becomes a  
15 problem if one feels a need to employ this new "old" test from *A&P Tea*, i.e., threshold of "invention," with the *Graham* factors, including the "secondary considerations." Specifically, the increased uncertainty in correlating the *A&P Tea* "[standard of] invention" with the secondary, *yet admittedly objective*, measures seems to degrade both Congress' and the Court's own prior attempts at objectivity in looking at the invention *as*  
20 *a whole*. To avoid any conflict with the then 17-year old §103 and the holdings in the *Graham-Adams-Calmar and Colgate* line of cases, the Court in *Anderson's-Black Rock* added the need for "strict observance" to the requirements of *Graham*. It would seem to be good use of the *common sense* espoused in *KSR* (2007) for one to insure compatibility of the stated criteria in *Anderson's-Black Rock* and the "invention" investigation of *A&P Tea*  
25 with the *Graham* factors, that the compatibility would require application of all three to *only* those inventions that are *just* a simple combination of two or three old *elements* in a fashion that can occur only in one way *and nothing more*, as is the case in *KSR*. This would enable the application of *A&P Tea*, *Anderson's-Black Rock*, *Graham* and now *KSR* in *all* cases, there being no jurisprudence to the contrary.

30 Every invention is a combination of "old elements" since no inventor "creates" anything used in the invention, thus the holding in *Anderson's-Black Rock* applies to *all* inventions and the real danger is in applying that one provision *a la carte* without considering *all* evidence pertaining to the development of the invention *as a whole*,

including the *circumstances surrounding the development at the time of the invention*. The *inspiration* to "*select and combine*" is the creative act as recognized by Judge Learned Hand in *B.G. Corp. v. Walter Kidde & Co.*, 79 F.2d 20, 22, 26 USPQ 288 (2d Cir. 1935), 17 years before Congress codified §103:

5 All machines are made up of the same elements; rods, pawls, pitmans, journals, toggles, gears, cams and the like, all acting their parts as they always do and always must. All compositions are made of the same substances, retaining their fixed chemical properties. But the elements are capable of an infinity of permutations and the selection of that group which  
10 *proves serviceable to a given need* may require a high degree of originality. *It is that act of selection which is the invention...* (emphasis added).

*Anderson's-Black Rock* raised the issue of whether the new invention yielded a new or different *function*, as opposed to a new or different *result* as posed in *Adams*. Thus,  
15 investigation into whether the *function* of the invention was different was promoted as the test (but *not* subsequently found necessary by other courts) rather than determining whether the invention yielded an unanticipated *result* as in *Adams*. Any requirement to consider satisfying *Adams*, *A&P Tea* and *Anderson's-Black Rock* in one's obviousness analysis may prove troublesome in any *given* case. Thus, the different factors cited by the  
20 various courts may need to be weighed one against another to enable one to *both* balance the analysis *and* to comply with the disparate holdings in this entire line of cases.

As stated above, the best "hard" evidence of nonobviousness is from the *objective* secondary considerations and any "test" that overlooks the importance of the inclusion of this evidence is *incomplete* when examining the invention *as a whole* as required by the  
25 language of §103. *Objectively*, the "secondary considerations" are the *primary* evidence in determining the level of *ordinary* skill in the art *at the time of the invention*, lest one cheats and uses hindsight *alone* to divine the *ordinary* level of skill in the art *at the time of the invention*. The amount and level of *judgment* one need apply to factors such as long felt need, teaching away, and like *objective* secondary considerations is nil when compared to  
30 the old pre-§103 subjective "standard of invention" or "level of invention." Not addressing the *objective* secondary considerations will lead to a return to the *subjective* judgments that led to the passage of §103 *and* deny the Applicant due process of law. *All* evidence must be considered before a nonobviousness judgment is made, by either the PTO or the courts. *In re Piasecki*, 745 F.2d 1468, 223 USPQ 785 (Fed. Cir. 1984);

*Simmons Fastener Corp. v. Illinois Tool Works*, 739 F.2d 1573, 222 USPQ 744 (Fed. Cir. 1984); *In re Sernaker*, 702 F.2d 989, 217 USPQ 1 (Fed. Cir. 1983).

If one were to randomly pick and choose among even only Supreme Court decisions for support, one would overlook the "troublesome" history and nature of obviousness analysis and unrealistically *simplify* the analysis. For example, the district court followed *A&P Tea* using the old saw "old-elements-in-combination-cannot-an-invention-make" while the Fifth Circuit used the "secondary considerations" in a *Graham* analysis to reverse. Granting cert, the Supreme Court reversed the Fifth Circuit. *Sakraida v. Agpro, Inc.*, 425 US 273, 189 USPQ 449 (1976). Siding with the district court, the Supreme Court re-stated the same "conflicting" rules of *Anderson's-Black Rock*, "side railing" any of the *objective* considerations set out in *Graham* that would have upheld the Fifth Circuit's reversal, possibly because the various elements and steps used in the invention were eminently understandable even to a layman such as a justice, any *A&P Tea* "synergism" of the combination notwithstanding. Understanding *Sakraida* in light of the history of the various holdings on the proper way to conduct obviousness analysis and not overturn any of these previous holdings, one must conclude that *Sakraida* is to be limited to its fact situation. A broader reading is in visible conflict with prior holdings cited in the most recent case, *KSR*.

In 2007, based on the need to address the confusion existing in the Federal Circuit in "correlating" the diverse holdings of *A&P*, *Anderson's-Black Rock*, *Sakraido*, the trio of *Graham*, *Calmar & Colgate*, and *Adams* and the holdings from the post-*Sakraido* Federal Circuit, *KSR* attempts to clarify the necessary steps for an obviousness investigation and one of the results is that *Graham*, *Adams*, *A&P*, and *Sakraido* are again cited as "good law" but the "approach" of *Graham* is re-emphasized as the correct approach, now laced with *flexibility* to apply sound logic ("common sense") to the task of evaluating the invention *as a whole*. This analysis of the invention *as a whole* includes consideration of the maligned "TSM test" as apparently applied "too strictly" in *KSR*. The difficulty in attaining "concrete" guidance from *KSR* is that none of the prior conflicting holdings of the Supreme Court were overturned, thus, the non-committal "flexibility" standard was espoused to provide a rationale that also acknowledges the principle of *stare decisis*.

*Flexibility*, however, without some "discipline," invites *subjectivity* back into the mix. *Graham* provides the discipline. Justice Clark in *Graham* noted that:

A. The patent system protects the useful arts, not just cutting edge technology, and the Constitution *requires* it to promote the progress of the useful arts.

B. In promoting this progress, §103 calls for protection of "nonobvious" inventions rather than those rising to a "level of invention," i.e., the statutory standard is nonobviousness.

C. Relative evidence for analysis of nonobviousness includes objective indicia (termed secondary considerations) such as:

(1) long felt, unsatisfied need *while the needed implementing arts and elements had long been available*;

(2) recognition that a problem existed and what it was went unseen by those of *ordinary* skill in the art *at the time the invention was made*;

(3) substantial unsuccessful attempts by those of *ordinary* skill in the art *at the time the invention was made*;

(4) commercial success of the invention causally related to the substance of the invention;

(5) replacement in the industry of the prior art devices/methods;

(6) copying of the invention by competitors;

(7) acquiescence by the industry of patent validity by licensing;

(8) teaching away from the technical direction of the invention by those of *ordinary* skill in the art *at the time the invention was made*;

(9) unexpectedness of the results of the invention by those of *ordinary* skill in the art *at the time the invention was made*, and

(10) incredulity that the approach worked on the part of those of *ordinary* skill in the art *at the time the invention was made*. (emphasis added).

Applicant respectfully submits that the PTO *must* establish *prima facie* obviousness in rejecting claims under §103 and the Examiner has not done so.

Applicant has previously amended Claim 8 upon which Claims 9 – 18 depend to add a purpose of automating the management of the collection of samples, thus bringing

the method Claims 8 – 18 in parallel with the apparatus Claims 1 - 7. Further, as the USPTO recognizes in MPEP § 2142:

5 The legal concept of *prima facie* obviousness is a procedural tool of examination which applies broadly to all arts. It allocates who has the burden of going forward *with production of evidence* in each step of the examination process. See *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Saunders*, 444 F.2d 599, 170 USPQ 213 (CCPA 1971); *In re Tiffin*, 443 F.2d 394, 170 USPQ 88 (CCPA 1971), *amended*, 448 F.2d 791, 171 USPQ 294 (CCPA 1971); *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967), *cert. denied*, 389 U.S. 1057 (1968). ... The examiner bears the initial burden of *factually supporting* any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under *no* obligation to submit evidence of non-obviousness. If, however, the examiner does produce a *prima facie* case, the burden of coming forward with evidence responsibility for arguments shifts to the applicant who may submit additional evidence of nonobviousness, such as comparative test data showing that the claimed invention possesses improved properties not expected by the prior art. The initial evaluation of *prima facie* obviousness thus relieves both the examiner and applicant from evaluating *evidence* beyond the prior art and the *evidence* in the specification as filed *until the art has been shown to render obvious* the claimed invention. (emphasis added)

25 Note that the term "suggest" has been replaced (after *KSR*) with "render obvious" which is what an "obviousness analysis" has to determine (a goal) and intimates *more than* a "mere suggestion" that one of *ordinary* skill in the art *at the time the invention was made* may have been aware of the multiple references available in separate unrelated patents.

30 MPEP §2142 further states:

35 To reach a proper determination under 35 U.S.C § 103 the examiner must step backward in time and into the shoes worn by the hypothetical 'person of *ordinary skill in the art*' *when the invention was unknown* and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter *as a whole*" of the invention. The tendency to resort to "hindsight" based upon applicant's disclosure is *often* difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must

be avoided and the legal conclusion must be reached on the *basis of the facts* gleaned from the prior art. (emphasis added).

Note that the guidance is to step back to the time just before it [the invention] was made, not just before *the application was filed*. Applicant respectfully does not find the Examiner has complied with the above principles in this Office Action. Further, the existence of elements of Applicant's invention, each in separate patents (*Alexander and Curkendall*) unrelated to a solution of the *problem* (as noted above) addressed by the Applicant, without some further *motivation* or *suggestion* for tying the multiple elements together is a *strong* indicator that the invention was not evaluated *as a whole* as required to comply both with case law and the MPEP. MPEP 2142 further elaborates on *how* to establish a *prima facie* case of obviousness. "Mere conclusory statements" without the "rationale underpinning" required by *KSR* means that the required *prima facie* case has not been made.

The key to supporting any rejection under 35 U.S.C. 103 is the *clear articulation of the reason(s) why* the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. \_\_\_, \_\_\_, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made *explicit*. The Federal Circuit has stated that "rejections on obviousness *cannot* be sustained with *mere conclusory* statements; instead, there must be some *articulated reasoning with some rational underpinning* to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at \_\_\_, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval). (emphasis added).

If the examiner determines there is factual support for rejecting the claimed invention under 35 U.S.C § 103, the examiner *must then* consider any evidence supporting the patentability of the claimed invention, such as any evidence *in the specification* or any *other* evidence submitted by the applicant. The ultimate determination of patentability is based on the *entire record*, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and *any secondary evidence*. *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The legal standard of "a preponderance of evidence" requires the evidence to be more convincing than the evidence which is offered in opposition to it. With regard to rejections under 35 U.S.C § 103, the examiner must provide *evidence which as a whole* shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not. (emphasis added).

When an applicant submits evidence, *whether in the specification as originally filed or in reply to a rejection*, the examiner *must reconsider* the patentability of the claimed invention. The decision on patentability must be made based upon consideration of *all* the evidence, including the *evidence* submitted by the examiner *and* the evidence submitted by the applicant. A decision to make or maintain a rejection in the face of *all* the evidence must *show* that it was based on the *totality* of the evidence. *Facts* established by rebuttal evidence must be evaluated *along with* the *facts* on which the conclusion of obviousness was reached, *not against* the conclusion *itself*. *In re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990). (emphasis added).

See *In re Piasecki*, 745 F.2d 1468, 223 USPQ 785 (Fed. Cir. 1984) for a discussion of the proper roles of the examiner's *prima facie* case and applicant's rebuttal evidence in the final determination of obviousness. ...

Just as the Applicant must provide support, i.e., evidence, for positions taken both in addressing the examiner's *requirement* to "make" a *prima facie* case as well as the rebuttal of a sufficient *prima facie* case, the examiner must support any rejection under § 103 with *evidence*. *In re Garrett*, 33 BNA PTCJ 43 (November 13, 1986). For example, an inventor discovered the optimum ratio for tank volume to contactor area for a waste water invention using continuously rotating contactors within the tank. The examiner cited one reference employing the contactors for waste water treatment and indicated the ratio was an obvious modification even though the cited reference made *no* mention of the ratio or need for its calculation, just as none of the cited references (*Alexander, Curkendall*) make a reference of the need to automate the process of collecting samples thereby eliminating or reducing error-prone manual entry and manual data manipulation. The court held the invention non-obvious, stating:

It is impossible to recognize, from the experiment taught [by the reference], that the "treatment capacity" is a function of "tank volume" or the tank volume-to-contactor ratio. *Recognition of this functionality* is essential to the obviousness of conducting experiments to determine the value of the "tank volume" ratio which will maximize treatment capacity. (emphasis added).

*In re Antonie*, 559 F.2d 618, 620, 195 USPQ 6, 8 (CCPA 1977).

Applicant respectfully notes that if Applicant's invention were the same as the cited references, in particular *Alexander*, then one would expect the same results from employing it and the *Alexander* invention is specifically limited to a sole purpose of "damage assessment" and concomitant geographic location of the damage to



communicate to an "Emergency Management Center." (Col. 7, lines 10-11; Col. 11, lines 53-57). Further, as also discussed below, combining *Curkendall* with *Alexander* would still not yield the performance of Applicant's invention because the basic underlying assumptions employed by the Applicant are not available for reference in any combination of the cited references.

There must be a *basis in the Art* for combining or modifying references. MPEP § 2143.01 states:

Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so. *In re Kahn*, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) (discussing rationale underlying the motivation-suggestion-teaching test as a guard against using hindsight in an obviousness analysis). ... (emphasis added).

In *Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 69 USPQ2d 1686 (Fed. Cir. 2004), the patent claimed underpinning a slumping building foundation using a screw anchor attached to the foundation by a metal bracket. One prior art reference taught a screw anchor with a concrete bracket, and a second prior art reference disclosed a pier anchor with a metal bracket. The court found motivation to combine the references to arrive at the claimed invention in the "nature of the problem to be solved" because each reference was directed "to precisely the same problem of underpinning slumping foundations." *Id.* at 1276, 69 USPQ2d at 1690. The court also rejected the notion that "an express written motivation to combine must appear in prior art references..." *Id.* at 1276, 69 USPQ2d at 1690. (emphasis added).

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts. Where the teachings of two or more prior art references conflict, the examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference might accurately discredit another. *In re Young*, 927 F.2d 588, 18 USPQ2d 1089 (Fed. Cir. 1991) (Prior art patent to Carlisle disclosed controlling and minimizing bubble oscillation for chemical explosives used in marine seismic exploration by spacing seismic sources close enough to allow the bubbles to intersect before reaching their maximum radius so the secondary pressure pulse was reduced. An article published several years later by Knudsen opined that the Carlisle technique does not yield appreciable improvement in bubble oscillation suppression. However, the article did not test the Carlisle technique under comparable conditions because Knudsen did not use Carlisle's spacing or seismic source. Furthermore, where the Knudsen model most closely approximated the patent technique there was a 30% reduction

of the secondary pressure pulse. On these facts, the court found that the Knudsen article would not have deterred one of *ordinary* skill in the art from using the Carlisle patent teachings.) (emphasis added).

Applicant notes that nowhere in *Alexander*, *Curkendall* or *Alexander* in view of  
5 *Curkendall* is there reference to automating the process of taking samples, providing hardware and software interfaces to various different instrumentation, providing barcode stamps and readers for tracking the samples and tying the date, time, location and other geographic information to a specific sample. (FIGS. 2-4; p. 8, line 12 - p. 9, line 2). This missing information provides *evidence* in Applicant's application of the  
10 differences between *Alexander* in view of *Curkendall* and Applicant's invention. Applicant further notes that *Alexander* works only to advise an EMC of "status" and damage at specific locations while being employed in other limited conditions. (Col. 11, lines 13-28; Col. 12, lines 1-24; Col. 16, lines 17-25 Abstract; FIG. 3). This is not relevant to the problem first identified by the Applicant, i.e., an automated system for managing  
15 the collection of samples that is capable of deployment with a single individual scientist or technician. Since *Alexander* merely provides for damage assessment and reporting, Applicant's problem is not addressed by considering *Alexander*. Nor is Applicant's problem addressed in the livestock "tracker" of *Curkendall*. There would be *no* correlation in the mind of one of *ordinary* skill in the art *at the time the invention was*  
20 *made* to use the damage assessment system of *Alexander* to develop the automated system for managing the collection of samples of Applicant's invention, given the requirements that need to be met: interfacing multiple instruments, man portable, labeling samples, recording inventory data, correlating time, space, position information and the like. Applicant's invention provides a unique configuration for automating the management of  
25 sample collection, archiving and subsequent processing. (FIGS. 2-4; p. 8, line 12 - p. 9, line 24). Compare to the use of the *Alexander* device for "damage assessment and reporting" and the *Curkendall* device for managing livestock. The *Alexander* device is totally unsuited to the requirements that dictated the development of Applicant's invention and does not "make obvious" Applicant's invention either alone or in  
30 combination with *Curkendall* (a portable RFID reader for collecting livestock information).

MPEP § 2143.01 further states:

5       The *mere* fact that references can be combined or modified does not render  
the resultant combination obvious unless the results *would* have been  
*predictable* to one of *ordinary* skill in the art. *KSR International Co. v. Teleflex*  
10       *Inc.*, 550 U.S. \_\_\_, \_\_\_, 82 USPQ2d 1385, 1396 (2007) ("If a person of *ordinary*  
skill can implement a *predictable* variation, § 103 likely bars its patentability.  
For the same reason, if a technique has been used to improve one device, and  
a person of *ordinary* skill in the art would recognize that it would improve  
similar devices in the same way, using the technique is obvious unless its  
10       *actual application* is beyond his or her skill."). (emphasis added).

15       Based on the previously provided affidavit of Mr. John Britt that indicates  
numerous presentations and journal articles on the related technology, the Applicant has  
provided *evidence* that the ordinary level of skill in the art was insufficient to *identify the*  
*problem*, thus whether the problem would have been obvious to solve once it had been  
20       identified is moot. The juried journal articles indicate the level of expertise of the  
Applicant and his recognized background in the technology of the Applicant's invention.  
The technology implemented in the Applicant's invention is sufficiently new, useful and  
non-obvious to merit the attention of these scholarly researchers and be considered as a  
new standard for use by the U.S. Army and other Government agencies for management  
25       of sample collection. (See previously provided affidavit). By all *objective* measures, the  
affidavit demonstrated the *extraordinary* expertise required to bring the technology of  
the Applicant's invention to fruition, technology *not* obvious to one of *ordinary* skill in the  
art at the time the invention was made, hence the need for one of *extraordinary* skill in  
the art, the Applicant, to first recognize and identify the *problem* and then to do the  
30       necessary R&D to solve it. The technical considerations necessary to implement the  
ARMST<sup>™</sup> are far beyond what is found in one of *ordinary* skill in the art *at the time the*  
*invention was made*.

      In discussing *Sakraida* and *Anderson's Black Rock*, in *KSR*, Justice Kennedy  
stated:

30       Following these principles *may be more difficult in other cases than it is*  
*here* because the claimed subject matter may involve more than the *simple*  
*substitution* of one known element for another or the mere application of a  
known technique to a piece of prior art ready for the improvement. Often, it  
will be necessary for a court to look to *interrelated teachings of multiple*  
35       *patents; the effects of demands known to the design community or present in*

*the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. (emphasis added).*

5 What may be taken from Justice Kennedy's discourse in *KSR* immediately above, is that an *apparent* reason to combine must be stated *given that* following the principles of *Sakraida* and *Anderson's Black Rock* in determining the threshold of "invention" needed may not be straightforward in those situations where *simple substitution* of one known  
10 element for another is *not* the case as with the Applicant's invention. Interrelated teachings of the two patents (*Alexander* and *Curkendall*) cited by the Examiner provide no insight into an *apparent reason* for combining them in the manner the Applicant has, e.g., there is no reference to a unique configuration for automating the management of sample taking from various instrumentation using a system that is man-packable in the field.  
15 Further, there were no *demands in the design community* since the use of manual methods and entry means (forms, keyboards, and the like) were adequate to manage collection of samples, albeit error prone, expensive and slow. (p. 1, lines 20-31). See also Mr. Britt's affidavit. It is not possible to address a solution until an *extraordinary* person skilled in the art at the time the invention was made *recognized and described the problem*, i.e., being  
20 able to *automate* the collection of samples while also reducing both error rate and cost. Without an *identified* problem, how could one of *ordinary* skill in the art *at the time the invention was made* have been motivated to solve it?

Justice Kennedy further states in *KSR*:

25 When it first established the *requirement of demonstrating a teaching, suggestion, or motivation to combine* known elements in order to show that the combination is obvious, the Court of Customs and Patent Appeals, *captured a helpful insight*. See *Application of Bergel*, 292 F.2d 955, 956-957 (1961). As is clear from cases such as *Adams*, a patent composed of several  
30 elements is not proved obvious *merely by demonstrating that each of its elements was, independently, known in the prior art*. Although common sense directs one to look with care at a patent application that claims as *innovation* the combination of *two* known devices *according to their established functions*, it can be important to *identify a reason* that would have prompted a person of *ordinary* skill in the relevant field *to combine* the elements in the way the  
35 claimed new invention does. (emphasis added).

Applicant notes the previously provided affidavit that provides the background and expert opinion of John Britt who has a masters in archaeology and over 18 years experience in archaeology, including military aspects thereof. He is an author or co-author of over 30 technical papers and articles in the field. Mr. Britt states that the time and expense of manually collecting samples and inputting related data such as location, time, aspect, orientation and the like subjected the project to errors due to manual data input and manipulation, time delays and increased expense. Applicant's invention addressed each of these weaknesses with an accurate, inexpensive and efficient automated system and method. Mr. Britt is also working closely with the Government to have the ARMS™ adapted as a standard for use at remote locations.

From the affidavit, it is obvious that Mr. Britt is not those of *ordinary* skill in the art, but rather of *extraordinary* skill in the art. It would not be appropriate to use the training and background of Mr. Britt as a model of the mythical artisan having *ordinary* skill in the art *at the time the invention was made*. If, after considerable training and many years of practical experience, Mr. Britt only recognized that there was a "problem" in using conventional means to manage sample collection, how would one of *ordinary* skill in the art at the time of the invention, say an archaeologist, biologist or environmental engineer or physicist with an undergraduate degree, recognize the problem identified by Applicant with extensive experience in research? *Recognition of the existence of a problem* must be made before *any* consideration may be made of the "likelihood" of it being obvious to one of *ordinary* skill in the art *at the time the invention was made*. Thus, a threshold of "problem recognition" by one of *ordinary* skill in the art *at the time the invention was made* must be addressed *before* investigation of the *motivation* of the mythical person of *ordinary* skill in the art *at the time the invention was made*. However, neither was addressed in Examiner's investigation.

MPEP § 2143.01 further states:

A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were *individually* known in the art is *not* sufficient to establish a *prima facie* case of obviousness without some *objective* reason to combine the teachings of the references. *Ex parte Levengood*,

28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). [R]ejections on obviousness cannot be sustained by *mere conclusory* statements; instead, there *must* be some *articulated reasoning* with some *rational underpinning* to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at \_\_\_, 82 USPQ2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). (emphasis added).

Applicant respectfully notes that Examiner cited references that at most *individually* contained only one or two of the elements of Applicant's invention, but that Examiner provided no *apparent* reason via "articulated reasoning with some rational underpinning" to combine the teachings of the cited references, thus the Examiner did not establish a *prima facie* case. The mere fact that references *can be* combined or modified does not render the resultant combination obvious unless the prior art *also suggests the desirability* of the combination. (emphasis added). *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Again, Applicant was not provided a *basis* "suggesting the desirability" of combining the cited patents to achieve the solution obtained via Applicant's invention. This further assumes that Examiner can present *evidence* that one of ordinary skill in the art at the time the invention was made *should* have been able to *identify* the problem as the Applicant has.

Further, the U. S. Court of Appeals for the Federal Circuit (CAFC) has stated that "the mere fact that the prior art *may* be modified in the manner suggested by the Examiner does not make the modification obvious *unless the prior art suggested the desirability of the modification*." (emphasis added). *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) (citing *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)). The Examiner has not provided a single example in the prior art that suggests the *desirability* of the combination of Applicant's invention, but rather that there exist separate inventions, each possibly using one or only a few of the elements (albeit for an entirely different purpose in the case of both *Alexander* and *Curkendall*) of Applicant's invention in a manner not ever *suggesting* to the mythical one of *ordinary* skill in the art *at the time the invention was made* that there may be an advantage of combining that one element with any of the other elements of the cited references to achieve Applicant's purpose (function). The CAFC recently noted that "[to] *prevent the use of hindsight* based on the invention to defeat patentability of the invention, this court

*requires the examiner to show a motivation to combine the references that created the case of obviousness."* *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). (emphasis added).

The *Rouffet* court further noted that there were three possible *sources* for such motivation, viz., "(1) the nature of the *problem* to be solved; (2) the teachings of the prior art; and (3) the knowledge of persons of *ordinary* skill in the art." *Id.* at 1357, 47 USPQ2d at 1458. (emphasis added). The court noted that the Board had relied simply upon "the high level of skill in the art to provide the necessary motivation" without explaining what specific understanding or technological principle within the knowledge of one of *ordinary* skill in the art *at the time of the invention* would have *suggested the combination*. Notably, the court said: "If such a *rote invocation could suffice to supply a motivation to combine*, the more sophisticated scientific fields would rarely, if ever, experience a patentable technical advance." *Id.* (emphasis added). Applicant specifically notes that nowhere in the cited prior art is there any evidence of the development of the specific relationships that permit the use of hardware and software interfaces to multiple pieces of instrumentation, together with GPS receivers and necessary recording, communications and processing resources to permit automation of sample collection. (FIGS. 1-4; p. 5, line 23– p. 6, line 18).

The Examiner has shown no *evidence* of motivation of any sort for one of *ordinary* skill in the art to combine the cited references as Applicant has. There is also no indication in any of the references that the function of automating sample collection would be possible using the referenced devices and methods of *Alexander* and *Curkendall*. Examiner has provided no explanation of what specific understanding or technological principle within the knowledge of one of *ordinary* skill in the art *at the time of the invention* would have suggested Applicant's unique, non-obvious design approach, including the very specific way of interfacing various equipment to automate sample collection and post-processing, given that one of *ordinary* skill in the art *at the time the invention was made* would have even *recognized the specific problem* as Applicant has done. *See also, In re Kotzab*, 217 F.3d 1365, 55 USPQ2d 1313 (Fed. Cir. 2000).

MPEP § 2143.01 further states:

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is *no suggestion or motivation* to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (Claimed device was a blood filter assembly for use during medical procedures wherein both the inlet and outlet for the blood were located at the bottom end of the filter assembly, and wherein a gas vent was present at the top of the filter assembly. The prior art reference taught a liquid strainer for removing dirt and water from gasoline and other light oils wherein the inlet and outlet were at the top of the device, and wherein a pet-cock (stopcock) was located at the bottom of the device for periodically removing the collected dirt and water. The reference further taught that the separation is assisted by gravity. The Board concluded the claims were *prima facie* obvious, reasoning that it would have been obvious to turn the reference device upside down. The court reversed, finding that if the prior art device was turned upside down it would be inoperable for its intended purpose because the gasoline to be filtered would be trapped at the top, the water and heavier oils sought to be separated would flow out of the outlet instead of the purified gasoline, and the screen would become clogged.) (emphasis added).

Applicant respectfully notes that Applicant's unique way of interfacing various instrumentation, computers, GPS devices and communications equipment, would not be considered for either the *Alexander* device or the *Alexander* device in view of *Curkendall* even by anyone of *ordinary* skill in the art at the time the invention was made since they had not identified, much less defined the problem. Further, the inventors of the *Alexander* "emergency management system," even in view of *Curkendall*, did not identify much less address the *problem* solved by Applicant's invention. Assuming the inventors of the systems and methods of *Alexander* and *Curkendall* themselves were of at least *ordinary* skill in the art, and in the best position to recognize its shortcomings, they did not recognize the problem and it took the Applicant, of *extraordinary* skill in the art, to both identify and solve the problem.

MPEP § 2143.01 further states:

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (Claims were directed to an oil seal comprising a bore engaging portion with outwardly biased resilient spring fingers inserted in a resilient sealing member. The primary reference relied upon in a rejection based on a combination of references disclosed an oil seal wherein the bore engaging portion was



reinforced by a cylindrical sheet metal casing. Patentee taught the device required rigidity for operation, whereas the claimed invention required resiliency. The court reversed the rejection holding the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." 270 F.2d at 813, 123 USPQ at 352.).

Applicant notes that a *Alexander* system and method would not be adaptable to automating the management of sample collection either alone in combination with the RFID device and method of *Curkendall* that depend on known locations or known "inventory items" (livestock) to implement, i.e., none of these designs could be cobbled together to work as Applicant's invention does. Since, the functions addressed by any of the above cited references would not work as steps in Applicant's invention, either alone or in combination, the references, in any combination, are not §103 prior art.

Judge Learned Hand in upholding the patent in *Lyon v. Bosch & Lomb Optical Co.*, 224 F.2d 530, 535, 106 USPQ 1, 5 (2d Cir. 1955), said:

The most competent workers in the field had for at least ten years been seeking a hard, tenacious coating to prevent reflection; there had been a number of attempts, none satisfactory; *meanwhile nothing in the implementary arts had been lacking to put the advance into operation*; when it appeared, it supplanted the existing practice and occupied substantially the whole field. We do not see how any combination of evidence could more completely demonstrate that, simple as it was, the change had *not* been "obvious... to a person having *ordinary* skill in the art." (emphasis added).

Applicant respectfully maintains that each of the two cited systems (*Alexander* and *Curkendall*) employed "implementary art" of computers, readers, recorders, GPS devices and the like, yet were unable to perform under the same conditions or to the same accommodations (automated sample management, for example) as Applicant's invention. The *problem* had not been identified, i.e., the limited conditions under which the two cited inventions can be used and suitability for efficient, error-free, inexpensive automation of the sample collection process.

Applicant acknowledges that "absent a showing of long-felt need or the failure of others, the mere passage of time without the claimed invention is not evidence of nonobviousness." *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed.Cir. 2004). There could be no "long felt need" if there were no problem (need) identified. The

*Iron Grip Barbell* case did not address the subject of "recognizing" the problem. Claims not brought up are not adjudicated, thus "recognition of the problem" is still a valid objective "secondary" consideration in addition to those of long-felt need and failure of others, for example.

Thus, either the problem addressed by the Applicant was not identified or if it had been identified earlier than Applicant's identification (an unlikely event and no evidence has been put forth that it had been identified before Applicant did) then the solution was beyond the ken of one of *ordinary skill* in the art *at the time the invention was made*. Absent a showing to the contrary, the *problem* of what to do about the limited conditions under which the two referenced systems (*Alexander* and *Curkendall*) can be used and the application to automating sample collection and post-processing had not been *identified* until the Applicant applied his *extraordinary* experience and *extraordinary* educational background to *both* identify and solve the problem.

Five years after *Lyon*, in *Reiner v. I. Leon Co.*, 285 F.2d 501, 503-504, 128 USPQ 25, 27 (2d Cir. 1960), Judge Learned Hand reversed a holding of obviousness, stating:

The test...directs *us* to surmise what was the range of ingenuity of a person "having *ordinary skill*" in the "art" with which we are totally unfamiliar; and we do not see how such a standard can be applied at all except by *recourse to the earlier work in the art and to the general history of the means available at the time*. To judge on our own that this, or that, new *assemblage* of old factors was, or was not, "obvious" is to substitute our ignorance for the acquaintance with the subject of those who were familiar with it. These are indeed some *signposts*: e.g., how long did the need exist; how many tried to find a way; *how long did the surrounding and accessory arts disclose the means*; how immediately was the invention recognized as an answer by those who used the new variant? (emphasis added).

From the above historical review, Applicant respectfully notes that even shortly after passage of the 1952 Patent Act the implications are clear that *many* factors, not all equal in the different scenarios (*surrounding circumstances*) arising at the specific time an invention is made, enter into a *complete* obviousness analysis. Applicant did not elucidate the differences only for the purpose of validating claims but also for the purpose of indicating what Applicant's invention is capable of performing and what the cited references, alone or in any combination, are not, thus establishing the patentable difference.

Judge Learned Hand's guidance is as good today (*Reiner* being "good law") as it was almost 50 years ago, providing an *objective* yardstick for measuring the nonobviousness of an invention. After all, the whole effort at establishing a nonobviousness "standard" is to eschew both *subjectivity*, and, as recently stated in *KSR*,  
5 *inflexibility* (in the *KSR* example, using *only* a "strictly" applied rule, i.e., TSM). This is not a "one-sided" or "one way" approach. What applies to the patentee in an infringement action also applies to the alleged infringer and the same is true for the applicant-examiner relationship. Both parties need to apply *objective* standards *flexibly* using common sense, although in the case of the applicant-examiner relationship, both  
10 parties should have the *same* goal: patent *protection* for a novel, useful, non-obvious invention and *no* protection for a truly obvious invention.

If one were to apply the above factors and guidance from *KSR* with "specific to the invention" objective factors existing *at the time of invention* to the inventions of the pre-*KSR* line of Supreme Court cases holding otherwise, it may now be apparent that the  
15 claimed inventions of *A&P Tea*, *Sakraido*, *Calmar & Colgate*, and even *Graham* itself, when evaluated *as a whole* in accordance with the goal of §103 and the *flexible, common sense* approach of *KSR*, *objectively* could be held to be non-obvious today. Reading between the lines of *A&P Tea*, *Sakraido* and their progeny, it appears that the same standard that has been applied to recognizing pornography, i.e., "I'll know it when I see  
20 it," was being applied to patentability in these cases – with a twist. If the invention employs nothing but elements of "old technology" that is easily understandable to a layman such as a judge, *and* simple to implement, it must be obvious and any reason, e.g., ["level" or "standard" of] *invention* of *A&P Tea*, to justify the conclusion is satisfactory. Applying subjective standard(s) such as "level of invention" foments confusion in the  
25 lower courts and inconsistency among the circuits and the *KSR* Court recognized that in providing guidance for analyzing the invention *as a whole*, "flexibly," and by conducting a "broad inquiry" using "common sense."

One of the first statements made by Justice Clark in *Graham* after noting that §103 added obviousness to novelty and utility as a test for patentability, was:

30 We have concluded that the 1952 Act was intended to codify judicial precedents embracing the principle long ago [383 U.S. 1, 4] announced by this court in *Hotchkiss v. Greenwood*, 11 How. 248 (1851), and that, while

the clear language of 103 places emphasis on an inquiry into obviousness, the general *level of innovation* necessary to sustain patentability remains the same. (emphasis added).

5 It is apparent that if one were to comply with the intent of Congress in passing §103, that one would intimate that "level of innovation" (as opposed to "level of invention") speaks to the novelty requirement of § 101, rather than the nonobviousness requirement of § 103.

Further, Justice Clark states:

10 Manifestly, the validity of each of these patents *turns on the facts*. The basic problems, however, are the same for each case and *require initially a discussion of the constitutional and statutory provisions* covering the patentability of inventions. (emphasis added).

15 And:

20 The *Hotchkiss* formulation, however, lies not in any label, but in its *functional* approach to questioning patentability. In practice, *Hotchkiss* has required a *comparison* between the *subject matter* of the patent, or patent application, and the *background skill* of the calling. It has been from this *comparison* that patentability was in this case determined. (emphasis added).

25 Applicant respectfully notes that the *ordinary* background skill in science (such as archaeology) and engineering (such as environmental engineering) applicable to Applicant's invention is most appropriately that of the scientist or engineer with an undergraduate degree, preferably an environmental engineer, biologist, or architect, whereas Applicant holds an advanced post-graduate degree in Anthropology and is a Registered Professional Archeologist (RPA) that *at the time of the invention* permitted  
30 him, because of his *extraordinary* skill in the art, to both quickly recognize and to solve the problem once recognized.

Of the trio of cases decided with *Graham*, only *Adams* validated the patent. The *Graham* patent was for a farm implement (clamp for vibrating shank plows) comprising "old elements." The invention was easily understandable by the lay person, e.g., a judge  
35 not educated in engineering or the sciences, as was the spray bottle top of the *Calmar-Colgate* invention. The invention in *Hotchkiss* was found to be a "mere" substitution of clay for other materials used at the time to make "simple" door knobs, easy enough for

the lay person to understand and, in reality, no surprise in its implementation and usefulness. The *Adams* battery, however, although understandable by most lay persons and containing "old elements" as cathodes and anodes, was a surprise "performer" and this "surprise element" was apparently enough to cross the threshold of *innovation* addressed by Justice Clark in *Graham*. Thus, although not stated by Justice Clark in these words, a "strong" novelty argument (available under §101) may be imported into a §103 obviousness analysis to tip the balance when a "surprise" *result* is "discovered." The "unexpected performance" certainly was an objective measure by which the "general level of *innovation*" (not "level of *invention*") may be gauged with no fear of hindsight factored into the judgment. Note that the intangible (and undefined) "general level of *innovation*" leaves open the door for evaluation of "simple" inventions by the non-scientist, possibly a worthy objective considering that objective "secondary considerations" *may* allow objective evidence to substantiate patents on inventions that, to the lay person, do not rise to the "general level of *innovation* necessary to sustain patentability." Thus, one must consider *all* evidence in performing an obviousness analysis (including, apparently, some §101 consideration of novelty or innovation), not just the *particular* evidence that in a *single* prior holding swayed the balance. Further, the different categories of evidence may carry different weights depending on the "circumstances surrounding the making of the invention," such that one type of evidence might be particularly persuasive in one circumstance and immaterial in another, as of particular note in *Adams*.

For the observer without a scientific background, this added consideration of "sufficient inventiveness" (not found in any statute) of *A&P Tea*, *Sakraida* and *Anderson's Black Rock* that "supplements" the *Graham* factors for evaluating § 103 "patentability" appears to be as workable as any although it does call for application of "common knowledge" in lieu of that available to one of *ordinary* skill in the art *at the time the invention was made*. For example, if one observes that an "ordinary lay person" is able to readily see the result of combining old *elements* in a certain fashion after some "suitable" amount of experimentation that does not involve unreasonable iterations, then one has, in their own mind, defined one of *ordinary* skill in the art (perhaps also at the time the invention was made), albeit subjectively. One would be tempted to say that if a judge can

understand the invention "right away," then determining the level of skill of one of *ordinary* skill in the art *at the time the invention was made* need not warrant much consideration. That is, if it appears to be "obvious" to the average person (or judge) having an *ordinary* background and *familiarity with common objects*, surely it must be obvious to one of *ordinary* skill in the art *at the time the invention was made*. Put another way, if it is easy for an un-trained eye to see both how an invention works and its benefit, absent other factors and ignoring the time of making the invention (as hindsight permits), the invention is obvious.

One might conclude from these early post-1952 Act cases, perhaps rightly so, that the justices wished to insure that future decision makers, including patent examiners, the BPAI, district court judges, the CAFC and even patent prosecutors, did not analyze "merely" using a simplified set of narrow rules, but rather looked at the invention *as a whole* using a "common sense" approach in a "broad inquiry," albeit not necessarily *explicitly* flexible as finally espoused in *KSR*. Of course, if one were to consider all Supreme Court precedence, *A&P Tea* and *Sakraida*, though somewhat at odds with the *Graham* factors, would still need to be "factored in" to accommodate *stare decisis*. Thus, the *flexible* "common sense" approach of a *KSR* "broad inquiry" nicely covered the entire history of the Supreme Court's obviousness holdings without overturning any. The fact that the Supreme Court is granting cert on cases that should have been able to be decided based on the history of the obviousness question in previous Supreme Court holdings indicates that the "investigation of obviousness" is not straightforward, despite the primary guidance (factors) in *KSR* to which the Court continues to defer, viz, the *Graham* factors.

One might also conclude that judicial history shows that the Court is troubled about the very real possibility that the PTO will grant patents on an untoward number of obvious inventions. Some may feel that the first line of defense is the examiner, but, in reality, the first line of defense should be the patent attorney or agent. The attorney or agent should carefully consider this history, and all the guidance provided therein, prior to *objectively* advising his client on the advisability of filing the patent application. Upon making this "threshold" decision to file a patent application, the patent attorney and examiner, in concert, should apply the historical guidance to the resultant application,

each being objective in the process of assessing the claimed invention *as a whole*. During examination, all of these cited factors and considerations of the "circumstances surrounding the making of the invention" that are applicable to both the claimed invention *and* the circumstances surrounding the invention need to be applied.

5       The best "quality" evidence suitable to support an *objective* measure as statutorily required by §103 is *objective* evidence, i.e., the uncontrovertibly un-biased "secondary considerations" of *Graham*, given that even a hint of the use of hindsight is to be avoided. These secondary considerations are totally independent of the judgement of observers and require no more than routine verification to establish their basis in truth. One such  
10   "secondary consideration" is the lack of a marketplace pull for the technology of Applicant's invention, given the alleged satisfactory performance of the traditional method of managing the process of sample collection. (p. 1, lines 21-31). This is complementary *evidence*, i.e., no one had identified a problem that needed to be addressed, given that existing sample collection methods and systems were assumed to be  
15   satisfactory prior to Applicant's invention. Applicant recognized that existing management of sample collection could be improved. Further, existing systems were not suitable for use by a single sample taker. Thus, Applicant *both* identified the problem *and* developed a system to eliminate both performance and logistical deficiencies in existing systems.

20       Justice Kennedy in *KSR* further elaborates on the one hand that:

Helpful insights, however, need not become rigid and mandatory formulas, and *when so applied* the TSM test is incompatible with our precedents. (emphasis added).

25       Note that the TSM test is *not* rejected outright but rather a caution to not apply it *rigidly* is given. Other than the *KSR* appeals court decision, no Supreme Court or Appeals Court "precedent" was reversed, meaning that *all* are appropriate for use in deciding what enters into a proper "obviousness analysis" and, in particular, the full *Graham* analysis is to be applied as specifically cited in *KSR*.

30       Further, Justice Kennedy noted that:

The obviousness analysis cannot be confined by a *formalistic* conception of the words teaching, suggestion, and motivation, *or* by *overemphasis on the importance of published articles* and the *explicit content*

5 *of issued patents. (emphasis added). ... There is no necessary inconsistency between the idea underlying the TSM test and the Graham analysis. But when a court transforms the general principle into a rigid rule that limits the obviousness inquiry, as the Court of Appeals did here, it errs. (emphasis added).*

10 Taken in the context of the *KSR* holding *as a whole*, neither the Examiner nor the Applicant is to "limit" their analysis to a "formalistic" application of a TSM test *or* by overemphasizing the importance of published articles and explicit content of patents. This statement does *more than* imply that all evidence must be considered and a balancing achieved. It does *not* mean that it is inappropriate to consider the "lack of" motivation or a suggestion but rather that a suggestion or motivation, or lack thereof, is to be *one* of the factors in the analysis.

15 Further, Justice Kennedy in *KSR* turns a statement from *Graham* around by stating:

20 One of the ways in which a patent's subject matter can be proved obvious is by noting that there existed *at the time of invention a known problem* for which there was an *obvious* solution encompassed by the patent claims. (emphasis added).

*KSR International Co. v. Teleflex Inc. et al.*, 550 U.S. 398, 127 S.Ct. 1727, 82 USPQ 2d 1385 (2007).

25 Thus, it is a two-step approach, the first of which is a threshold step: the problem must have been *known* at the time of invention to one of *ordinary* skill in the art *at the time the invention was made*. Further, *if* the problem is *shown* to be known *at the time of invention* to other than the inventor, the solution proposed in the claimed invention must have been "obvious" to one of *ordinary* skill in the art *at the time the invention was made*. To show that the solution is obvious the three "principal" *Graham* factors must be considered objectively, preferably supplemented by *Graham's inherently objective*  
30 "secondary considerations" to complete a *full Graham* analysis. Thus, any obviousness inquiry must be a multi-faceted one as indicated by Justice Kennedy in delineating the first error made by the Appeals Court:

35 The first error of the Court of Appeals in this case was to foreclose this reasoning by holding that courts and patent examiners should look *only* to the *problem* the patentee was trying to solve. 119 Fed. Appx., at 288.



Thus, if the court had not also looked at whether the *problem* itself was known (obvious), for example, then the Court could not have considered *all* the evidence needed to perform a proper obviousness analysis.

As to "obvious to try", Justice Kennedy states:

5           The same *constricted* analysis led the Court of Appeals to conclude, in error, that a patent claim cannot be proved obvious *merely* by showing that the combination of elements was "obvious to try." ... *When there is a design need or market pressure to solve a problem and there are a finite number of identified predictable solutions, a person of ordinary skill has good reason to*  
10 *pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under §103. (emphasis added).*

15           Thus, the pejorative term "merely" is recognized for what it is, albeit backhandedly. Most importantly, however, Justice Kennedy emphasized that any argument that an approach is "obvious to try" must *not* be made *a la carte*, but rather upon providing *evidence of a design need or market pressure motivating the approach* that  
20 *is claimed to be "obvious to try," together with at least a sampling indicating the existence of only a "finite number of identified predictable solutions."* Note that in *KSR* only two (2) elements needed to be combined: an adjustable pedal with a fixed pivot point and a sensor mounted at the pivot point, a really simple concept for a layman to understand and "attribute" to a person of *ordinary* skill in the art. This is not the case with Applicant's  
25 *invention involving a dedicated and astute approach to providing a system that meets all of the "sample management" requirements, some of which, such as time, space, position correlation and automated tracking, correlation and inventorying are complex.*

          As to applying *common* knowledge and *common* sense, Justice Kennedy notes recent cases decided "correctly," viz, *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (2006) ("Our *suggestion* test is in actuality quite  
30 *flexible* and not only permits, but *requires, consideration of common knowledge and common sense*") and *Alza Corp. v. Mylan Labs, Inc.*, 464 F.3d 1286, 1291 (2006) ("There is *flexibility* in our obviousness jurisprudence because a *motivation* may be found implicitly in the prior art. We do *not* have a *rigid* test that requires an actual teaching to  
35 *combine...*") (emphasis added).

Note that "common *knowledge* and common *sense*" are not to be applied in lieu of measuring the technology against what one of *ordinary* skill in the art *at the time the invention was made* would have at his disposal. There is a real danger of substituting "common knowledge" for the required standard of *Graham*. Note also that both of the  
5 above cases speak to a "TSM" test, one (*Dystar*) referring to a "suggestion test" and the other (*Alza*) referring to "a motivation." A motivation, though not explicit, still must be *found*. Thus, it is appropriate to look *somewhere* in the prior art for a *suggestion* or *motivation* to combine. Justice Kennedy in *KSR* further elaborates on the "proper question" to have asked in addressing whether a vehicle pedal designer of *ordinary* skill  
10 (at the time of the invention) would have considered the invention claimed:

The proper question to have asked was whether a pedal designer of *ordinary* skill, facing the wide range of *needs created by developments* in the field of endeavor, would have seen a benefit to upgrading *Asano* with a sensor.  
(emphasis added).

The "marketplace" pull was important *motivation* in the *KSR* case and applying "common sense" in the analysis, the mythical person of *ordinary* skill in the art *at the time the invention was made* is found to be both aware of market needs (motivation shown) *and* capable of designing a mount for a sensor on a fixed pivot point of a pedal (skill in the art  
20 shown), thus the claimed invention was deemed obvious to one of *ordinary* skill in the art *at the time the invention was made*. However, absent the "known" market forces or some other suitable *motivation* or *suggestion enumerated* in an analysis *employing common sense* and *applied flexibly* in a "broad inquiry," the claimed invention may not have been obvious "enough" to one having *ordinary* skill in the art *at the time the invention was made*  
25 to meet the threshold of §103 as currently interpreted. Thus, the maligned and sometimes mis-applied TSM test has not been banished to the dustbin of history but rather one is cautioned to apply it "flexibly" using "common sense" in a "broad inquiry." But, can one do the analysis without considering *any* motivation, teaching or suggestion in the analysis? The answer is no because this could truncate the "flexible" application of  
30 "common sense" in a "broad inquiry."

Noted in *In re Kahn*, 441 F. 3d 977 (Fed. Cir. 2006) is:

The ultimate determination of whether an invention would have been obvious is a legal conclusion *based on underlying findings of fact*. *In re*

5        *Dembiczak*, 175 F.3d 994, 998 (Fed. Cir. 1999). (emphasis added). ...  
However, we review the Board's underlying factual findings, *including a*  
*finding of a motivation to combine, for substantial evidence. In re Gartside*,  
203 F.3d 1305, 1316 (Fed. Cir. 2000). ... Rather, to establish a prima facie  
case of obviousness based on a combination of elements disclosed in the prior  
art, the Board *must articulate the basis* on which it concludes that it would  
have been obvious to make the claimed invention. *In re Rouffett*, 149 F. 3d at  
1355. ... (emphasis added).

10        Further, the *Rouffett* Court said:

15                When the Board does not explain the *motivation*, or the *suggestion* or  
*teaching*, that would have led the skilled artisan *at the time of the invention* to  
the claimed combination *as a whole*, we infer that the Board *used hindsight* to  
*conclude that the invention was obvious. Id.* at 1358. (emphasis added).

20        To overcome an implication of hindsight, a motivation or suggestion must be found  
and documented via sufficient *evidence*. The Court provides no indication of the *amount*  
of hindsight that would meet a threshold, just its use.

25        The second factual inquiry of *Graham* requires ascertaining the difference between  
the application at issue and the prior art, it being essential to comport with §103 to view  
the invention "as a whole." As noted above, Applicant has established the patentable  
difference between their invention and the elements of *Alexander* and *Curkendall* not  
addressing the *required* elements of Applicant's invention, in particular as specifically  
amended herewith. It is *legal* error to focus on the obviousness of substitutions and  
differences between *elements* of an applicant's invention and prior art rather than on the  
obviousness of the invention *as a whole* compared to the prior art. *Hybritech, Inc. v.*  
*Monoclonal Antibodies, Inc.*, 802 F.2d 1561, 1367, 1383, 231 USPQ 81, 93 (Fed. Cir. 1986),  
cert. den., 480 US 947 (1987).

30        Thus, not comparing all conventional sample collection management systems and  
processes to Applicant's invention can be considered not comparing the invention *as a*  
*whole* to what exists. Rather, Examiner compares one element only of Applicant's  
invention (e.g., computer) to another single element only of an existing patent and then  
does the same for multiple such elements (communication devices, GPS) in existing  
patents, then infers the combination to be obvious when combined, not randomly but in  
35        the same geometry, interfaced connections and application (function) as used in  
Applicant's invention. This can not be § 103 prior art with no suggestion or motivation,

explicit or implicit, that the problem would have been obvious or, even considering that one of *ordinary skill* in the art *at the time the invention was made* would have recognized the problem, for performing the allegedly sufficient combination present in *Alexander* and *Curkendall* in the manner necessary to practice Applicant's invention. There is absolutely  
5 no discussion of the specific engineering analysis required to be done in order to use any of the cited references to achieve the performance of Applicant's invention. That scenario (considering the circumstances surrounding the making of the invention) can not be considered obvious under § 103 when considered *as a whole*.

Further, *all* elements of the claimed invention must be considered, not merely the  
10 gist of the invention. *Vas-Cath, Inc. v. Mahrkar*, 935 F. 2d 1555, 19 USPQ 2d 111 (Fed. Cir. 1991); *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F. 2d 888, 1575, 221 USPQ 669 (Fed. Cir. 1984); *Jones v. Hardy*, 727 F. 2d 1524, 1527-1528, 229 USPQ 1021, 1024 (Fed. Cir. 1984) ("Reducing a claimed invention to an 'idea' and then determining patentability of the 'idea' is error."); *In re Fine*, 837 F. 2d 1071, 5 USPQ 2d 1596 (Fed.  
15 Cir. 1988); *In re Evanega*, 829 F. 2d 1110, 4 USPQ 2d 1249 (Fed. Cir. 1987).

Thus, the specific interfaces required to implement Applicant's invention, for example, need be considered, not merely the comparison of *some* of the constituents of the invention with some of the constituents present in existing patents. For example, the reporting method of the *Alexander* device has a different purpose than Applicant's  
20 invention for that "element," and the RFID devices of *Curkendall* are unnecessarily expensive substitutes for bar code stickers of Applicant's invention.

Finally, advantages, properties, utility and unexpected results flowing from an invention must be taken into account. They are part of the invention *as a whole* and the *circumstances surrounding the making of the invention*. *In re Chupp*, 816 F. 2d 643, 2  
25 USPQ 2d 1437 (Fed. Cir. 1987); *Fromson v. Advance Offset Plate, Inc. (Fromson II)* at 755 F.2d 1549, 1556, 225 USPQ 26, 31 (Fed. Cir. 1985); *In re Piasecki*, 745 F.2d 1468, 223 USPQ 785 (Fed. Cir. 1984); *Carl Schenck, A.G. v. Nortron Corp.*, 713 F. 2d 782, 218 USPQ 698 (Fed. Cir. 1983); *In re Sernaker*, 702 F. 2d 989, 217 USPQ 1 (Fed. Cir. 1983).

The *utility* of Applicant's invention allows for efficient (minimal manual data  
30 entry/manipulation), error-free (digitally interfaced instrumentation/computer/processor) and inexpensive (reduced manpower) with reduced time and increased accuracy in

collecting and processing samples especially in abnormal environmental conditions. (p. 2, lines 12-28). These have not been considered in Examiner's obviousness analysis so that the invention has not been evaluated *as a whole*.

The third factual inquiry of *Graham* concerns criteria to be used in determining the level of *ordinary* skill in the art *at the time of the invention*. Note the "educational level of the inventor" was once included in the criteria but has been supplanted for practical purposes by the somewhat more difficult to define, but appropriate, "level of *ordinary* skill in the art [at the time the invention was made]." *Stewart-Warner Corp. v. City of Pontiac*, 767 F. 2d 1563, 1570, 226 USPQ 676, 680-681 (Fed. Cir. 1985).

Considerations include:

- 1). Type of problem encountered in the art;
- 2). Prior art solutions to those problems;
- 3). Rapidity with which innovations are made (but not by the inventor);
- 4). Sophistication of the technology;
- 5). Educational level of active workers in the field (excluding the inventor).

*Environmental Designs Ltd. v. Union Oil*, 713 F. 2d 693, 218 USPQ 865 (Fed. Cir. 1983) and *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F. 2d 443, 449-450, 230 USPQ 416, 420 (Fed. Cir. 1986).

In most cases, prior art solutions to the problem *addressed by the inventor* are the best indicator of level of skill in the art at the time of invention. In Applicant's case, there were no prior art solutions to the problem addressed by the Applicant because the Applicant first recognized the problem. The problem is how to address the shortcomings of the existing sample collection management systems as applied to providing an efficient inexpensive, error-free, yet durable system for carrying by a single sample taker. The use of manually controlled conventional systems indicates a slow rate of change in the art, assuming one of *ordinary* skill in the art *at the time the invention was made* was able to define the problem, but that did not happen. The associated technology, i.e., engineering analysis, identification of alternative COTS hardware and software, development of specialized hardware and software interfaces, and in-depth modeling and testing, and the like, when viewed as individual elements is not particularly sophisticated and as to educational level, one would expect an engineer with an undergraduate degree could

practice each separate one individually. It is the multiple aspects of Applicant's inception that make it non-obvious, viz, identifying the problem, deciding on the required approach and developing the necessary models and testing to apply, and processing for the specific elements and designing tests to validate that make it novel, useful and non-obvious to one of *ordinary skill in the art at the time the invention was made*. Although, it may be that a technically untrained person, such as a judge, may "see" an applicant's solution as obvious, often the technically aware person would reject the solution because of technical barriers known to him but not appreciated by the untrained person. This same difference can be extended to exist between one of *ordinary skill in the art at the time the invention was made* and one of *extraordinary skill*, such as the Applicant. Obviousness is *not* established by the layperson's "common knowledge or current understanding" [with a dash of subliminal hindsight in many cases]. *Panduit Corp. v. Dennison Mfg. Co. (Panduit II)*, 810 F. 2d 1561, 1573, 1 USPQ 2d 1593, 1599 (Fed. Cir. 1987); *Litton Industrial Products v. Solid State Systems*, 755 F. 2d 158, 225 USPQ 34 (Fed. Cir. 1985) (the inquiry is not what would have been obvious "to the judge or to the common layman").

Applicant's system is not limited to specific scenarios as are the *Alexander* (emergency management) and *Curkendall* (livestock management) devices and methods, either alone or in a combination as yet un-suggested by any argument proffered by Examiner, and is therefore patentably distinct.

Applicant developed and employs a unique automated system and method to manage sample collection, archival and post-processing, hence there is no basis for comparison to any of the cited references, each having a different function than Applicant's invention. This illustrates the weakness of just taking elements from various patents *a la carte* without considering the invention *as a whole*, including a motivation or suggestion for combining elements. Further, as to dependent claims, Applicant is free to utilize the concept of claim differentiation under each independent claim as Applicant sees fit.

As to the need for applying common sense to any obviousness analysis, Justice Kennedy in *KSR* had this to say:

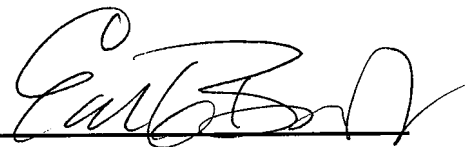
The Court of Appeals, finally, drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias. A *factfinder* should be aware, of course, of the *distortion* caused by hindsight

5       bias and must be cautious of arguments reliant upon ex post reasoning. See  
      *Graham*, 383 U.S. at 36 (warning against a "temptation to read into the prior  
      art the teachings of the invention in issue" and instructing courts to "guard  
      against slipping into the use of hindsight" (quoting *Monroe Auto Equipment*  
      *Co. v. Heckethorn Mfg. & Supply Co.*, 332 F. 2d 406, 412 (CA6 1964)). Rigid  
      preventative (sic, preventive) rules that deny factfinders *recourse to common*  
      *sense*, however, are neither necessary under our case law nor consistent with  
      it. *Id.*, at 17. (emphasis added).

10       Under *Conclusion* of the office action in para. 4, Examiner makes the action final.

      No new matter has been entered via this amendment. In view of the foregoing, it is  
      respectfully requested that the subject application be passed to issue as amended previously  
15       with amended Claims 1 and 8 and original Claims 2 - 7 and 9 - 18.

20       Respectfully Submitted,

By: 

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25       U.S. Army Corps of Engineers  
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